ABSTRACT OF THE INVENTION

The present invention relates to isolated polynucleotides encoding a family of silencing mediators of retinoic acid and thyroid hormone receptor (SMRT) isoforms, including vertebrate and invertebrate isoforms thereof. For example, a full length human SMRT co-repressor, two isoforms of a mouse SMRT-- a longer form, mouse SMRTα , and a shorter form, mouse SMRTβ, and an isoform of an insect (Drosophilia), SMRTER -- as well as peptide portions of the SMRT co-repressors that can modulate transcriptional potential of a member of the nuclear receptor superfamily (nuclear receptor); to oligonucleotides that can hybridize specifically to such a polynucleotide; to vectors and to host cells containing such polynucleotides. The invention also relates to polypeptide SMRT co-repressors encoded by such invention SMRT polynucleotides, and to peptide portions thereof that can modulate transcriptional potential of a nuclear receptor; including peptide portions of a SMRT co-repressor that are not present in an N-CoR polypeptide. In addition, the invention relates to chimeric molecules and to complexes containing a SMRT co-repressor or peptide portion thereof, to antibodies that specifically bind such compositions, and to methods for identifying an agent that modulates the repressor potential of a SMRT co-repressor. The invention also provides methods for identifying an agent that modulates a function of a SMRT co-repressor; for modulating the transcriptional potential of a nuclear receptor in a cell using the compositions of the invention; and for identifying a molecule that interacts specifically with a SMRT co-repressor.

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